REMARKS

This is in response to the Office Action of 18 December 2003. Claims 1-9 are pending in the application, and Claims 1-9 have been rejected.

Claims 1-2 and 5-6 have been amended; Claims 3-4 and 7-9 have been cancelled; and Claims 10-16 have been added.

No new matter has been added.

In view of the amendments above and remarks below, Applicants respectfully request reconsideration and further examination.

About The Invention

The present invention relates generally to computer system security. More particularly, the invention relates to a distributed information processing system that includes a cluster of interacting devices which for a network, e.g., a home network. These devices, or appliances, have finite state machines (FSMs) onboard for monitoring the integrity of the cluster. The system includes a control server running a simulator of the cluster's FSMs. Each respective device's FSM calculates, per time step, a respective numerical value that depends on the values of the other devices' FSMs in a previous time step; on the respective device's internal state (e.g., based on the content of device's memory and/or I/O message buffers); and on a history of the previously calculated values. This mathematical relationship is chosen such that it causes the collection of FSMs to behave as if they formed a dynamic non-periodic stochastic process. The simulator does the same on the server. The results of the simulator and the FSMs should be identical. Upon a mismatch, an alert is generated. The security of the system resides in the fact that in order to be able to hack the system, the hacker needs to have a snapshot of the values of all the FSMs at a certain step; to collect the values of the steps taken into account in the history; and to get into the internal states of each device. All such manipulations need to be performed in one time step, which makes it a complex computational task and practically impossible due to the distributed character of the system. An

additional measure is to allocate computation time of the CPU of each device for the full 100% to the calculation of the numerical value by maximizing the number of previous states taken into account. If there is a need for compute time, the number of previous states is reduced.

Rejections under 35 USC 102(e)

Claims 1, 3, 5, 7, and 9 have been rejected under 35 USC 102(e) as being anticipated by Zager, et al. (6,393,386).

Claims 3, 7, and 9 have been cancelled, thereby rendering the rejections thereof under 35 USC 102(e) moot.

Independent Claim 1 has been amended to include limitations from Claim 2 and Claim 4 which result in the recitation, in this independent Claim, of adapting a length of the respective history used in a secondary task to accommodate the computational requirements of a primary task. Independent Claim 5 has been similarly amended.

Zager, et al., do not appear to disclose, suggest, or provide motivation for the invention defined by amended Claims 1 and 5. For at least this reason, Applicants respectfully submit that the rejection of Claims 1 and 5 under 35 USC 102(e) has been overcome.

Applicants further respectfully submit, that the inventions set forth in Claims 1 and 5, are not disclosed or suggested by the combination of Zager, et al., and Yemini, et al. The information at "Expanding Codebooks to Include Probabilistic and Temporal Codes", and "Generation of Causality Matricies", of Yemini, et al., do not disclose, suggest, or provide motivation for varying the length of a history used by a secondary task in a particular device based on the computational requirements of a primary task in that device.

Rejections under 35 USC 103(a)

Claims 2, 4, 6, and 8 have been rejected under 35 USC 103(a), as being unpatentable over Zager, et al., in view of Yemini, et al., (US Patent 5,661,668).

Claims 4 and 8 have been cancelled, thereby rendering the rejections thereof under 35 USC 103(a) moot.

As described above, independent Claims 1 and 5 have been amended, and Claims 2 and 6 depend, respectively, therefrom.

Applicants respectfully refer to the arguments presented above in connection with the amendments to independent Claims 1 and 5. Applicants respectfully submit that at least in view of the amendments to independent Claims 1 and 5, the rejection under 35 USC 103(a) of dependent Claims 2 and 6 has been overcome.

New Claims 10-16

New Claims 10-16 are directed to a methods in accordance with the present invention. More particularly, these Claims recite the operations of a networked collection of devices each of which performs a primary task and a secondary task, wherein the secondary task reduces or increases its computational requirements based on the computational needs of the primary task, and wherein the networked devices communicate both updated internal state information as well as the results of the secondary tasks to a control server, where the control server runs a simulation of the secondary tasks and determines if the results of the secondary tasks that it receives from the networked devices are correct. Support for these Claims can generally be found throughout the specification, and can more particularly be found at pages 1-2 and 5; and in Fig. 1.

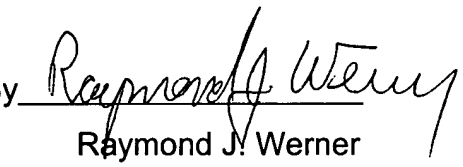
The cited references do not appear to disclose or suggest the invention defined by new Claims 10-16. In particular, the references do not appear to teach the limitation of varying the length of a history used by the secondary tasks so as to accommodate the computational requirements of a primary task.

Conclusion

All of the objections and rejections in the outstanding Office Action of 18 December 2003 have been responded to, and Applicants respectfully submit that the pending Claims 1-2, 5-6, and 10-16 are now in condition for allowance.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

By 

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